MONTGOMERY WATSON

June 27, 2000

Mr. Kevin Adler
Remedial Project Manager
U.S. Environmental Protection Agency
Region V, SR-6J
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: Groundwater Treatment System
Quarterly Monitoring Report – First Quarter 2000
ACS NPL Site

Dear Mr. Adler:

Please find enclosed two copies of the Groundwater Treatment System, Quarterly Monitoring Report, First Quarter 2000 for the American Chemical Service NPL Site in Griffith, Indiana. This report is submitted in accordance with the PGCS Performance Standard Verification Plan, April 1997.

We are also sending two copies of this report to IDEM and two copies of this report to Black & Veatch Waste Systems. If you need additional copies of this report please let me know and we can forward them to you, or whomever you specify.

Sincerely,

MONTGOMERY WATSON

Peter J. Vagt, Ph.D., CPG
Project Manager

cc: S. Grady (2 copies of each report)
S. Mrkvicka, B&V (2 copies of each report)
ACS Technical Committee (1 copy of each report to each member)

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27755 Diehl Road
Suite 300
Warrenville, Illinois
60555

Tel: 630 836 8900
Fax: 630 836 8959

GROUNDWATER TREATMENT SYSTEM

QUARTERLY MONITORING REPORT
FIRST QUARTER 2000

AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

Montgomery Watson File No. 1252057

Prepared For:

American Chemical Service NPL Site RD/RA Executive Committee
Griffith, Indiana

Prepared By:

Montgomery Watson
27755 Diehl Road, Suite 300
Warrenville, Illinois 60555

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FIRST QUARTER 2000

AMERICAN CHEMICAL SERVICE NPL SITE
GRIFFITH, INDIANA

Prepared For:

American Chemical Service NPL Site RD/RA Executive Committee
Griffith, Indiana

Prepared by: _____ 6/27/00
Robert A. Adams, EIT — Date
Project Engineer

Approved by: _____ 6/27/00
Peter Vagt, Ph.D., CPG — Date
Project Manager

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1.0 INTRODUCTION

Montgomery Watson, on behalf of the ACS RD/RA Executive Committee, commenced operation of an on-site groundwater treatment system at the American Chemical Service NPL Site (ACS Site) in Griffith, Indiana on March 13, 1997. The system was designed to treat groundwater from the perimeter groundwater containment system (PGCS) and certain volumes of water from the Barrier Wall Extraction System (BWES). The treatment consists of a phase-separator for oil and free product removal, equalization tanks, a UV-oxidation unit for destruction of organic constituents, an air stripper to remove methylene chloride and other organics, a chemical precipitation and clarification unit to remove metals, a sand filter to remove suspended solids, and activated carbon vessels for final polishing of the treated groundwater. The treated effluent from the treatment system is discharged to the nearby wetlands, west of the treatment system, in accordance with Agency approvals.

The 22,000-gallon storage tank (fract tank) used during the full-scale pilot study conducted at the treatment plant from the end of July to the middle of November 1998 continued to be used for additional volatile organic compound (VOC) reduction during this reporting period. The rest of the components from the full-scale pilot study were removed in November 1998. The results of the full-scale pilot study were used to design upgrades to the existing groundwater treatment plant. The groundwater treatment plant is being upgraded to handle the anticipated higher levels of organic contamination present in the BWES groundwater. These upgrades, currently under construction, will include phase-separation of free-organic product and oil and grease, aerated equalization of collected groundwater, and activated sludge treatment to reduce the biological oxygen demand (BOD_5) and chemical oxygen demand (COD) in the collected groundwater.

This Groundwater Treatment System report summarizes effluent analytical data and water level gauging data collected from January 2000 through March 2000.

2.0 COMPLIANCE MONITORING

2.1 INTRODUCTION

Effluent samples were periodically collected from the treatment system to demonstrate compliance with the discharge limits (Table 2.1) established by Indiana Department of Environmental Management (IDEM) and United States Environmental Protection Agency (U.S. EPA). The Performance Standard Verification Plan (PSVP) requires quarterly effluent sampling for the system (Table 2.2). To be conservative, the effluent sampling is being conducted on a monthly basis. During the previous reporting periods, the effluent compliance samples were collected on a monthly basis. The samples will continue to be collected on a monthly basis until the treatment system is operating in a relatively steady state after completion and startup of the groundwater treatment plant upgrades.

Sampling and analyses were performed in accordance with the Agency-approved PSVP Quality Assurance Project Plan (QAPP) prepared by Montgomery Watson for the ACS RD/RA Executive Committee in April 1997. Quality control measures were also instituted in accordance with the PSVP QAPP. The following paragraphs present details on sampling and analyses, and also summarize the analytical data for the treatment system effluent.

2.2 SAMPLING AND ANALYSES

Effluent samples are collected each month during the first quarter. For this reporting period, the samples were collected on the following days:

Monitoring Period	Sample Date
Month 32	1/5/00, 1/28/00
Month 33	2/2/00, 2/24/00
Month 34	3/16/00

Effluent samples were collected directly from a sample tap on the effluent line just before it exits the groundwater treatment system building. In addition, the annual sediment sample was collected from one of the treatment plant effluent outfalls on February 3, 2000. All samples were placed in contaminant-free containers, as specified in the U.S. EPA Specifications and Guidance for Obtaining Contaminant-Free Sample Containers (U.S. EPA, 1992). Appropriate sample containers and preservatives, as specified in the QAPP, were used to collect and preserve the samples. Following sample collection, the sample containers were refrigerated at 4° C in coolers. Chain-of-Custody forms were prepared to track the transfer of samples from the treatment system to the laboratories. In accordance

with the approved QAPP, the effluent water samples were analyzed by the following analytical methods:

Parameter	Analytical Method
VOCs	SW-846 8260B
SVOCs	SW-846 8270C
Pentachlorophenol	SW-846 8270C and SIM
Pesticides/PCBs	EPA 608
Metals (Excluding Mercury)	SW-846 6010
General Water Quality Parameters (TSS and BOD-5)	EPA 160.2 and 405.1
Mercury	SW-846 7470
pH	EPA 150.1

The sediment sample and associated quality control samples were analyzed for PCBs using analytical method SW-846-8082.

2.3 ANALYTICAL RESULTS

During this period of operation, a polychlorinated biphenyl (PCB) exceedence (result was estimated at 0.11 µg/L, limit is 0.00056 µg/L or non-detect) was reported in the January 2000 compliance sample. A follow-up effluent sample was collected on January 28, 2000 and analyzed for PCBs. No PCBs were detected in the follow-up sample. During the February 2000 compliance sampling, exceedences of biochemical oxygen demand (BOD_5) (result was 33 mg/L, limit is 30 mg/L) and trichloroethene (TCE) (result was 7 µg/L, limit is 5 µg/L) were observed in the effluent sample. A follow-up effluent sample was collected on February 21, 2000 and the results were non-detect for TCE and 44 mg/L for BOD_5. However, the benzene concentration in this sample was in exceedence of the discharge limit (result was 30 µg/L, limit is 5 µg/L). A more detailed discussion of these samples is contained below. A comparison of the analytical data collected during the monitoring period with the discharge limits is presented in Table 2.3 and the analytical data sheets are contained in Appendix A.

January 5, 2000 Compliance Sample

A PCB (Aroclor-1254) concentration of 0.11 µg/L was estimated in the effluent sample collected on January 5, 2000. This concentration is above the effluent limit of 0.00056 µg/L (with a non-detect below 0.1 to 0.9 µg/L being considered in compliance). U.S. EPA was immediately informed of the exceedence in a letter dated January 26, 2000.

The result of this sample was assigned a "J" qualifier by the laboratory, which indicates that the result is an estimate value that is less than the quantitation limit and greater than the instruments detection limits. A follow-up sample was collected on January 28,2000 and analyzed for PCBs to help determine if this was the start of a long-term problem or just an isolated incident. The results of this sample were non-detect for all PCBs, including

Aroclor-1254. The analytical packages for both samples were validated by Montgomery Watson and found to be acceptable.

This was the first time that any PCB compounds were detected in the GWTP effluent and PCBs have not been detected since the January 2000 sample. Therefore, we believe that this result was an anomaly and does not indicate a trend or continuing problem with the GWTP effluent.

February 2, 2000 Compliance Sample

A BOD_5 concentration of 33 mg/L was recorded for the compliance sample collected on February 2, 2000, above the discharge limit of 30 mg/L, and a TCE exceedence was also observed during this sampling event (result was 7 µg/L, limit is 5 µg/L). U.S. EPA was immediately informed of the exceedences and investigations into the possible causes of the exceedences in a letter dated February 17. 2000. A follow-up sample was collected on February 24, 2000. TCE was not detected in this sample, but BOD_5 was detected at a concentration of 44 mg/L, which was still in exceedence of the discharge limit. Also, an exceedence of benzene was observed in this sample (result was 30 µg/L, limit is 5 µg/L). This exceedence was reported to the U.S. EPA by telephone. Due to the collection of the second sample being late in the month, the next sample of the effluent was collected as the scheduled March 2000 compliance sampling event. The sample results were non-detect for both benzene and BOD_5.

Two possible causes for these exceedences were identified. The first is due to the intermittent operation of the aeration tank during late January because of construction workers working near and above the tank while erecting the building expansion (as documented in our letter to the U.S. EPA dated February 21, 2000 regarding the TCE result.) This could have resulted in less efficient VOC and BOD_5 removal during these shutdown times.

The second potential cause of the exceedences is the 10,000-pound granular activated carbon (GAC) units. The carbon in these units was changed on January 10, 2000. When the effluent was sampled one month after change-out the trichloroethene and BOD concentrations were higher than normal. Upon receipt of the results of the February 25 sample for BOD, the carbon in both of the 1,500-pound GAC units was replaced (by a different supplier than the carbon for the 10,000-pound GACs) and the 10,000-pound GAC units were temporarily bypassed. The interior of the 10,000-pound GAC units was inspected by the vessel and carbon suppliers on March 6, 2000. The inspection indicated that there was a black slimy build-up in the interior of both units. We believe that this build-up could be biological growth and that it could effect the operation of the GAC units and/or contribute BOD to the effluent. The 10,000-pound GACs were cleaned and sanitized and the activated carbon was replaced. No exceedences have been observed since this action.

The annual sediment sample was collected from the groundwater treatment plant outfall and analyzed for PCBs. The location of the annual sediment sample is shown in Figure 2.1. The sample and associated quality control samples were collected in accordance with

the PSVP to help determine if PCB accumulation is occurring in the outfall. Aroclor-1254 was detected in the two sediment samples collected (results were 22 µg/kg and 15 µg/kg in the duplicate). These results are below the laboratory reporting limit, and therefore are estimated concentrations. The analytical results from the first (and only other) annual sediment sample indicate that no PCB compounds, including Aroclor-1254, were detected in last year's sample (collected in December 1998) from the same location. However, last year's sample was analyzed by a different laboratory and with a higher reporting limit. A summary of the analytical data for the sediment samples is contained in Table 2.4 and detailed analytical reports are attached in Appendix B.

An investigation of the wetland area to the northwest of the ACS site was conducted by Montgomery Watson in May 1996 based on Remedial Investigation (RI). Locations for soil/sediment samples were selected by representatives of the United States Environmental Protection Agency (U.S. EPA) and Montgomery Watson to more clearly delineate the extent and concentrations of PCBs in the wetland. Samples were collected from several locations across the wetlands, including the middle GWTP outfall (sediment sample SD19). Results of this sampling indicate that residual PCBs, including Aroclor-1254, were present in the wetland. The results of sediment sample SD19 contained a concentration of Aroclor-1254 (36 µg/kg) above the Aroclor-1254 concentrations of the samples collected in December 1998 and February 2000. The wetland investigation is documented in *Technical Memorandum Wetland Investigation, American Chemical Services, Inc., NPL Site, Griffith, Indiana*, May 1997 and a summary of the sampling results and a map of the sampling locations is contained in Appendix C.

Although an estimated concentration of Aroclor-1254 was detected in the sediment sample this year, the estimated concentration is less than the concentration reported during the initial sampling of the wetland area northwest of the ACS plant site. Therefore, we do not feel that the GWTP discharge is contributing to the accumulation of PCBs at the effluent outfall. However, sediment samples will continue to be collected in accordance with the PSVP.

3.0 TREATMENT SYSTEM PROCESS MODIFICATIONS

There were no long term operational problems with the groundwater treatment system during this quarter. The only change from historic operating conditions was the continued use of the equalization/aeration tank from the full-scale activated sludge pilot study. The system has been operating in the current configuration with the equalization/aeration tank since November 1998. This configuration was discussed in the quarterly monitoring report for the First Quarter 1999.

Construction of the GWTP upgrades began in August 1999 and continued through the first quarter of 2000. The work performed during this monitoring period included:

a) Conducted a pre-construction completion inspection of the activated sludge plant
b) Completed installation of the concrete blower pad
c) Conducted an inspection to identify areas of the secondary containment system liner that required additional work or repair and completed the identified work/repairs
d) Backfilled the secondary containment system to the required elevation
e) Continued procurement of tanks and process piping for the GWTP upgrade
f) Completed erection of the gravity phase separator tank (T-101)
g) Completed erection of the building expansion for the GWTP upgrade
h) The catalytic oxidizer-scrubber unit was delivered to the site

Additional GWTP upgrade work to be continued/completed during future monitoring periods includes:

a) Procurement of process equipment
b) Completion of the treatment plant building expansion
c) Installation of the catalytic oxidizer-scrubber unit
d) Installation of the process pumps and piping
e) Installation of the electrical and control lines and associated upgrades
f) Upgrade the programmable logic control center
g) Start-up the activated sludge plant (tentatively scheduled for May 2000)
h) Start-up the remaining new components of the GWTP upon completion of the upgrades

4.0 PGCS AND BWES GAUGING ACTIVITIES

The PGCS trench groundwater extraction wells were operated in "auto" mode continuously throughout this monitoring period. In "auto" mode, each of the PGCS extraction wells are set to turn on or off automatically based on water levels within tank T-2. This mode is used to control the flowrate through the treatment system. In accordance with the PSVP for the Site, a discussion on the effect of the PGCS and BWES on the water table near the Site is presented in each quarterly monitoring report. This section presents a discussion on the groundwater elevation findings during the months of January through March 2000. Groundwater elevation measurements were collected throughout the Site on March 27, 2000. However, to keep track of the groundwater table inside the barrier wall, levels were collected from the BWES piezometers (P-3, P-32, P-49 and P-96) on a regular basis. The levels from these four piezometers are shown in the table below.

	Water Table Elevation			
Date	**P-3**	**P-32**	**P-49**	**P-96**
January 7, 2000	634.77	634.82	633.88	634.49
January 17, 2000	634.57	634.82	633.88	631.19
January 31, 2000	634.77	635.02	634.28	631.89
February 14, 2000	634.47	634.92	634.38	630.49
March 23, 2000	635.07	635.52	634.38	633.79

These levels indicate that during the reporting period, the water table inside the barrier wall has been maintained at a fairly constant level (approximately 632 to 635) by continued operation of the BWES. These levels have been maintained at a constant level to minimize the amount of BWES groundwater that needs to be treated and maintain the water table at a low enough level to prevent overtopping of the barrier wall. The water elevations inside the barrier wall are depicted graphically on Figure 4.1. The water level at piezometer P-40 was approximately 4 feet lower than water levels in surrounding piezometers (P-108, P-32, and P-39). We are going to investigate to determine if P-40 is isolated from the other piezometers, if there is potentially a leak in the barrier wall in near P-40, if the survey information for P-40 is incorrect, or if there are other factors that have led to the lower water level at that piezometer. P-96 is in close proximity to BWES extraction trench EW-11, and therefore fluctuates in direct response to the operation of the pump in EW-11.

The influence of the PGCS trench on groundwater flow patterns is illustrated by Figure 4.2 (March 2000). The direction of groundwater flow was from east to west during these months. These figures indicate an inward gradient toward the PGCS.

The barrier wall was constructed to isolate a highly contaminated zone under the site and the BWES was installed to collect the contaminated water within the barrier wall. A series of 16 piezometers was installed in eight pairs, one piezometer of each pair on either side of the barrier wall at each of the BWES trench locations, to allow measurement and tracking of water level measurements. In order to ensure that the barrier wall was serving its

designed function, groundwater elevations in these piezometers both inside and outside the barrier wall are monitored.

Groundwater elevations inside and outside the barrier wall were monitored on March 27, 2000. Figure 4.3 illustrates these groundwater elevations. Fluctuations in the gradient across the barrier wall occur due to seasonal groundwater conditions, pumping rates from the BWES, and infiltration through the Site covers. However, the groundwater elevations measured in the piezometers indicated that the elevations inside the barrier wall were all 3.14 feet to 5.34 feet higher than the elevations outside the barrier wall. These data demonstrate that the barrier wall is successfully performing the intended function of isolating and containing the groundwater from the known source areas of the Site inside the barrier wall. Water levels from the piezometers on March 27, 2000 are presented below:

Piezometer	Location[1]	Water Level	Difference[2]
P-93	Outside	630.12	5.34
P-49[3]	Inside	635.46	
P-95	Outside	630.35	4.48
P-96	Inside	634.83	
P-97	Outside	630.98	3.64
P-98	Inside	634.62	
P-99	Outside	631.51	3.57
P-100	Inside	635.08	
P-101	Outside	631.37	3.96
P-102	Inside	635.33	
P-103	Outside	Dry[4]	NA
P-104	Inside	635.42	
P-105	Outside	632.11	3.14
P-106	Inside	635.25	
P-107	Outside	630.96	4.33
P-108	Inside	635.29	

Notes:

1. Location indicates inside or outside the barrier wall.
2. A positive value indicates that the water level is higher within the barrier wall. A negative value would indicate that the water level is lower within the barrier wall.
3. Piezometer P-94 was damaged and could not be measured this monitoring period. Therefore the groundwater level from piezometer P-49 was used to calculate the hydraulic gradient. Piezometer P-94 will be repaired.
4. Piezometer P-103 was dry and could not be measured this monitoring period. The total depth of P-103 is 13.58 feet below the top of the well casing indicating that the groundwater at P-103 was less than 631.39 feet above mean sea level.

NA Value could not be calculated from single measurement.

It is not the intent to continuously operate with the higher groundwater levels inside the barrier wall. The groundwater levels within the barrier wall during this monitoring period were balanced to maintain a safe level that would not over flow the barrier wall while minimizing the amount of groundwater within the barrier wall that requires collection and treatment resulting in excessive GAC usage. Upon completion of the groundwater

treatment plant upgrades, the groundwater pumping rate of the BWES will be increased to lower the water table for implementation of the in-situ soil vapor extraction systems to be installed in accordance with the Final Remedy.

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Table 2.1
Groundwater Treatment System Effluent Discharge Limits
American Chemical Service NPL Site
Griffith, Indiana

Groundwater Quality Parameter	Effluent Standard (Limit)
General Water Quality Parameters	
PH	6 - 9 S.U.
BOD-5	30 mg/L
TSS	30 mg/L
Inorganics	
Arsenic	50 µg/L
Beryllium	NE
Cadmium	4.1 µg/L
Manganese	NE
Mercury	0.02 µg/L (w/DL = 0.64)
Selenium	8.2 µg/L
Thallium	NE
Zinc	411 µg/L
Volatile Organics	
Acetone	6,800 µg/L
Benzene	5 µg/L
2-Butanone	210 µg/L
Chloromethane	NE
1,4 – Dichlorobenzene	NE
1,1 – Dichloroethane	NE
1,2 – Dichloroethene – cis	70 µg/L
Ethylbenzene	34 µg/L
Methylene chloride	5 µg/L
Tetrachloroethene	5 µg/L
Trichloroethene	5 µg/L
Vinyl chloride	2 µg/L
4 – Methyl - 2 – pentanone	15 µg/L
Semi-Volatile Organics	
bis(2 – Chloroethyl) ether	9.6 µg/L
bis(2 – Ethylhexyl) phthalate	6 µg/L
Isophorone	50 µg/L
4 – Methylphenol	34 µg/L
Pentachlorophenol	1 µg/L
PCBs	
PCBs	0.00056 µg/L (w/DL = 0.1 to 0.9)

Notes:
NE = No effluent limit established.
DL = Detection limit

Table 2.2
Sampling Frequency Scheme
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Analytes	Cumulative Time From Startup[1]	Frequency[3]
Flowrate and pH	–	Continuous
BOD, TSS, SVOCs and Metals	0 to 7 days	Once per day
	8 to 30 days	Once per week
	31 to 180 days	Once per month
	181 days onward[2]	Once per quarter
VOCs	0 to 7 days	Once per day
	8 to 30 days	Once per week
	31 days onward[2]	Once per month
PCBs	0 to 7 days	Once
	8 to 30 days	Once
	31 to 180 days	Twice
	181 days onward[2]	Once per quarter
PCBs in Sediment (one location)	–	Once per year

Notes

1. Cumulative time from startup of the groundwater treatment system. Startup refers to the point at which contaminated groundwater from the extraction trench was being introduced into the treatment system. Startup occurred once the initial equipment/system testing with clean water was completed (March 13, 1997).
2. The monitoring period covered in this report is within this cumulative time division.
3. Due to the exceedences observed in the previous reporting periods, compliance samples are currently being collected on a monthly basis.

Table 2.3
Summary of Compliance Monitoring Data
First Quarter 2000
American Chemical Service NPL Site
Griffith, Indiana

Event	Month 32	Month 32	Month 33	Month 33	Month 34	
Date	1/5/00	1/28/00	2/2/00	2/24/00	3/16/00	Effluent Limits
pH	7.8 /Q	NA	7.8	NA	8.2 /Q	6-9
TSS	ND	NA	ND	NA	ND	30
BOD	ND	NA	[redacted]	[redacted]	ND	30
Arsenic	11.2	NA	ND U/B	NA	15.4 /B	50
Beryllium	ND U/B	NA	0.2 B/B	NA	ND U/B	NE
Cadmium	0.35 B/B	NA	ND U/B	NA	ND U/B	4.1
Manganese	5320 /B	NA	974 /B	NA	5390 /B	NE
Mercury	ND	NA	ND U/B	NA	ND	0.02 (w/DL = 0.64)
Selenium	ND	NA	ND /UJ	NA	ND	8.2
Thallium	3.8 B/	NA	5.6 B/B	NA	ND U/B	NE
Zinc	10.6 B/	NA	ND U/B	NA	ND U/B	411
Benzene	ND U/UJ	NA	ND	[redacted]	ND	5
Acetone	ND U/UJ	NA	42 /J	5,200 E/E,D	ND U/UJ	6,800
2-Butanone	ND U/UJ	NA	8 /J	33	ND U/UJ	210
Chloromethane	ND	NA	ND	ND	ND U/UJ	NE
1,4-Dichlorobenzene	NR	NA	0.4 J/J	ND	ND	NE
1,1-Dichloroethane	ND	NA	ND	ND	ND	NE
cis-1,2-Dichloroethene	ND	NA	0.4 J/J	ND	ND	70
Ethylbenzene	ND	NA	0.2 J/J	0.2 J/	ND	34
Methylene chloride	0.6 /J,UJ	NA	2 /J	2	4	5
Tetrachloroethene	ND	NA	ND	ND	ND	5
Trichloroethene	ND U/UJ	NA	[redacted]	ND	ND	5
Vinyl chloride	ND	NA	0.2 J/J	ND	ND	2
4-Methyl-2-pentanone	ND	NA	ND U/UJ	8	ND U/UJ	15
bis (2-Chloroethyl) ether	ND	NA	ND	NA	ND	9.6
bis(2-Ethylhexyl) - phthal	2 JB/	NA	ND	NA	ND	6
4 - Methylphenol	ND U/R	NA	ND	NA	ND U/R	34
Isophorone	ND	NA	ND U/UJ	NA	ND	50
Pentachlorophenol	ND /UJ	NA	ND	NA	ND /Q	1
PCB/Aroclor-1016	ND	ND	ND	NA	ND	0.00056 (w/DL = 0.1 to 0.9)
PCB/Aroclor-1221	ND	ND	ND	NA	ND	0.00056 (w/DL = 0.1 to 0.9)
PCB/Aroclor-1232	ND	ND	ND	NA	ND	0.00056 (w/DL = 0.1 to 0.9)
PCB/Aroclor-1242	ND	ND	ND	NA	ND	0.00056 (w/DL = 0.1 to 0.9)
PCB/Aroclor-1248	ND	ND	ND	NA	ND	0.00056 (w/DL = 0.1 to 0.9)
PCB/Aroclor-1254	[redacted]	ND	ND	NA	ND	0.00056 (w/DL = 0.1 to 0.9)
PCB/Aroclor-1260	ND	ND	ND	NA	ND	0.00056 (w/DL = 0.1 to 0.9)

Notes:

Shaded cells indicate discharge exceedances
pH data is expressed in S.U.
TSS and BOD_5 data is expressed in mg/L
Metals, VOC, SVOC and PCB data is expressed in µg/L
ND = Not detected
NE = No effluent limit established.
NA = Sample not analyzed for this compound

Suffix Definitions:

_/ = Data qualifier added by laboratory
/_ = Data qualifier added by data validator
B = Compound is also detected in the blank
E = Compound exceeds the upper level of calibration range of instrument
J = Result is detected below the reporting limit and is an estimated concentration
Q = Sample was analyzed out of the recommended holding time
ND = Not detected
JB = Analyte is detected in the compliance sample below the reporting limit and is an estimated concentration and the compound is also detected in the method blank resulting in a potential high bias
UB = Analyte is not detected at or above the indicated concentration due to blank contamination

Table 2.4
Summary of Sediment Data
American Chemical Service NPL Site
Griffith, Indiana

PCB Compound	Results (ug/kg)		
	12/4/98	2/3/00	2/3/00 DUP
Aroclor-1221	ND(33)	ND(77)	ND(100)
Aroclor-1232	ND(33)	ND(59)	ND(79)
Aroclor-1242	ND(33)	ND(41)	ND(55)
Aroclor-1248	ND(33)	ND(41)	ND(55)
Aroclor-1254	ND(33)	22 J	15 J
Aroclor-1260	ND(33)	ND(59)	ND(79)
Aroclor-1016	ND(33)	ND(59)	ND(79)

Notes:

1. ND(__) = Compound was detected at or above the detection limit in parenthesis
2. J = Result is detected below the reporting limit and is an estimated concentration
3. The December 4, 1998 sample was analyzed by Quanterra. The February 3, 2000 sample and duplicate was analyzed by Compuchem.

SEDIMENT SAMPLE LOCATION

WS - 630.9

WETLANDS

GWTP OUTFALLS

PGCS

APPROXIMATE WETLANDS BOUNDARY

BARRIER WALL

GWTP EFFLUENT SYSTEM

APPROXIMATE LANDFILL BOUNDARY

GROUNDWATER TREATMENT PLANT

WS - 634.5

WS - 635.1

N

0 150

SCALE IN FEET

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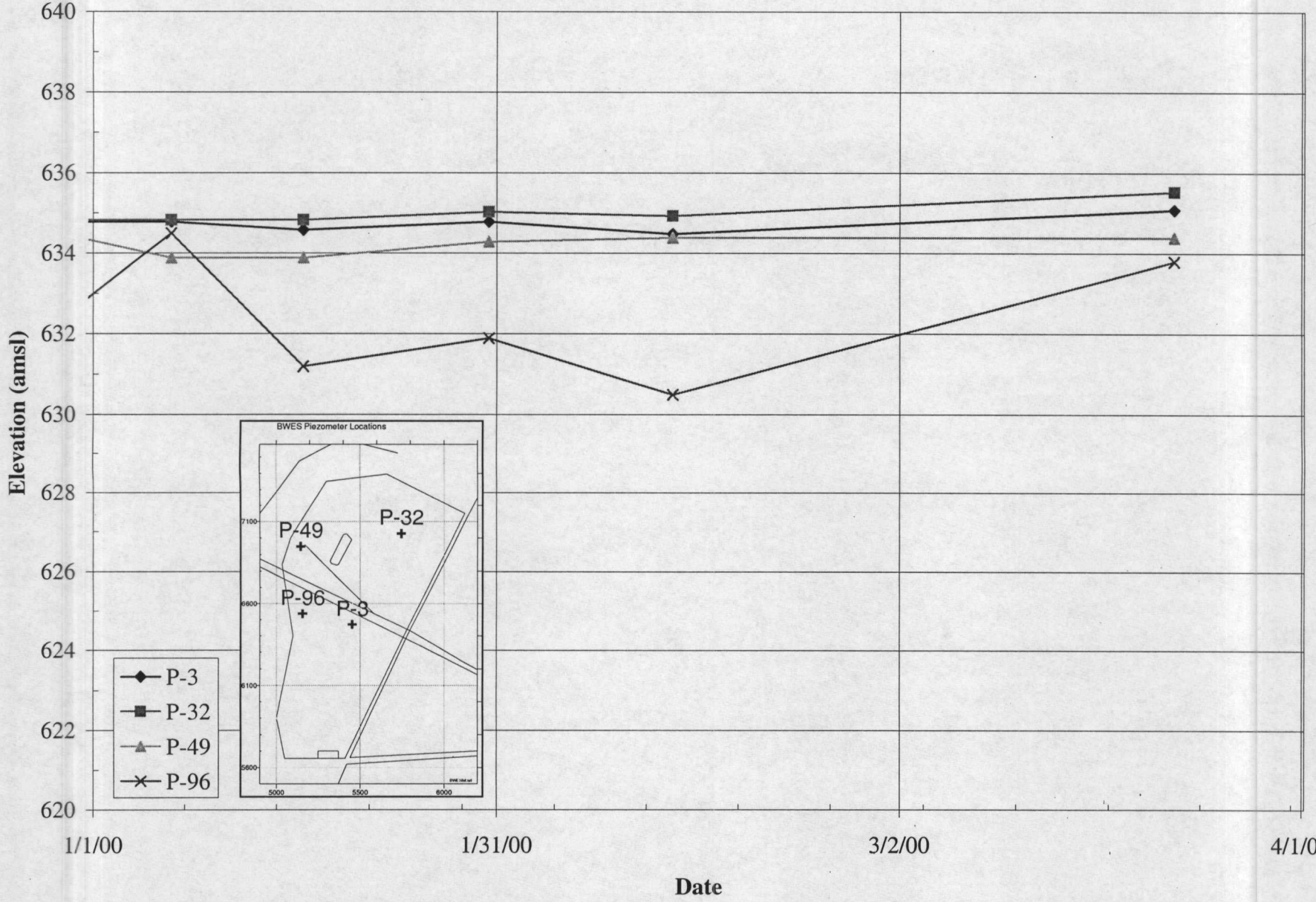
SCALE			FIGURE
1" = 150'	**MONTGOMERY WATSON** Chicago, Illinois	AMERICAN CHEMICAL SERVICES, INC. GRIFFITH, INDIANA	ANNUAL SEDIMENT SAMPLE COLLECTION LOCATION	2.1



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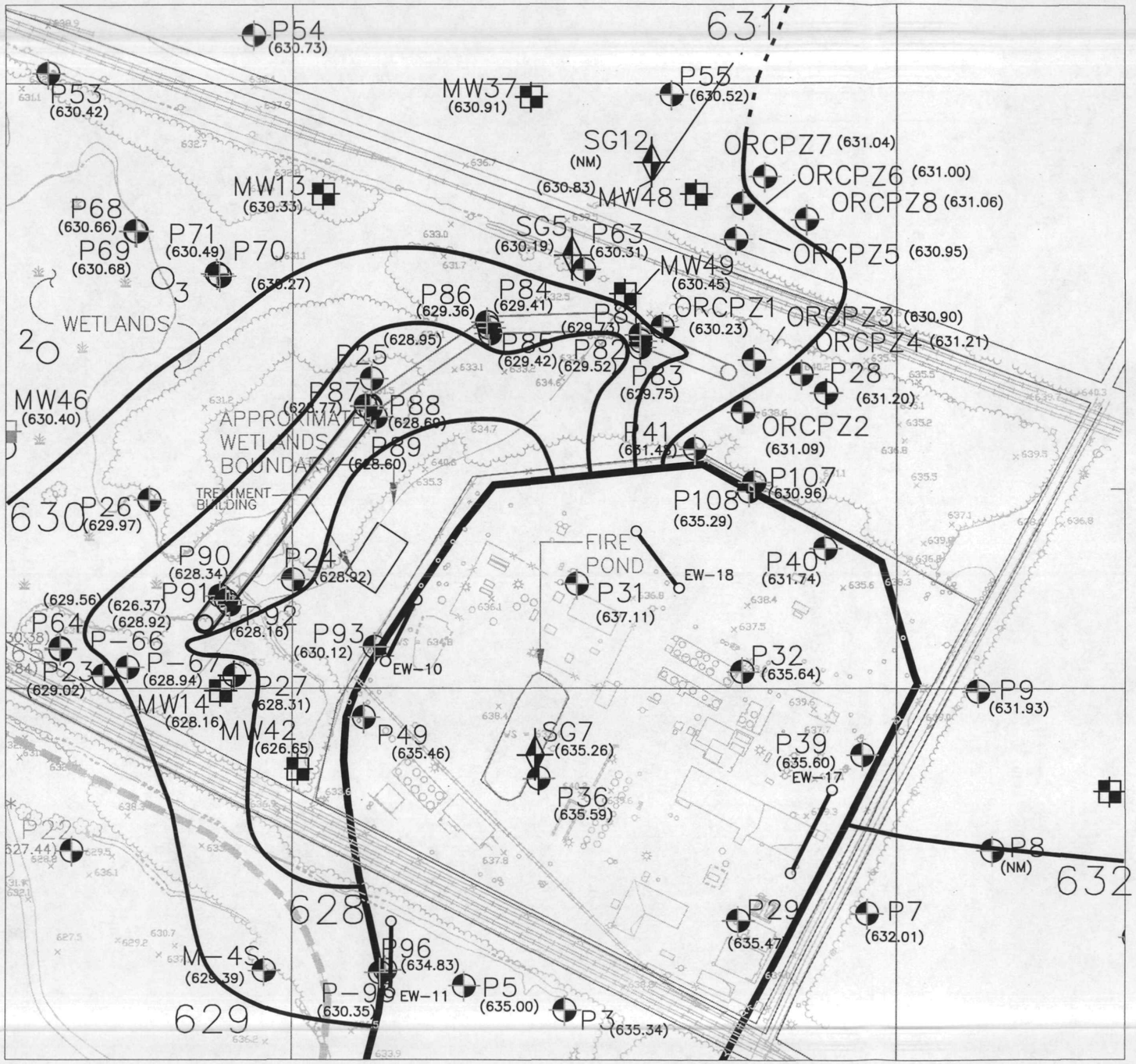
BWES levels 00_1aqtr

FIGURE 4.1
WATER LEVELS INSIDE BARRIER WALL



LEGEND

P106	PIEZOMETER LOCATION AND DESIGNATION
ORCPZ7	ORC PIEZOMETER LOCATION AND DESIGNATION
MW48	MONITORING WELL LOCATION AND DESIGNATION
SG12	STAFF GAUGE LOCATION AND DESIGNATION
(DRY)	WELL/STAFF GAUGE WAS DRY DURING MEASURING
(631.56)	GROUNDWATER ELEVATION
	BARRIER WALL
	GRIFFITH LANDFILL BOUNDARY
	PERIMETER GROUND WATER CONTAINMENT SYSTEM EXTRACTION TRENCH
EW-11	BWES EXTRACTION TRENCH LOCATION AND DESIGNATION
630	GROUNDWATER ELEVATION CONTOUR BASED ON GROUNDWATER ELEVATION DATA

NOTE

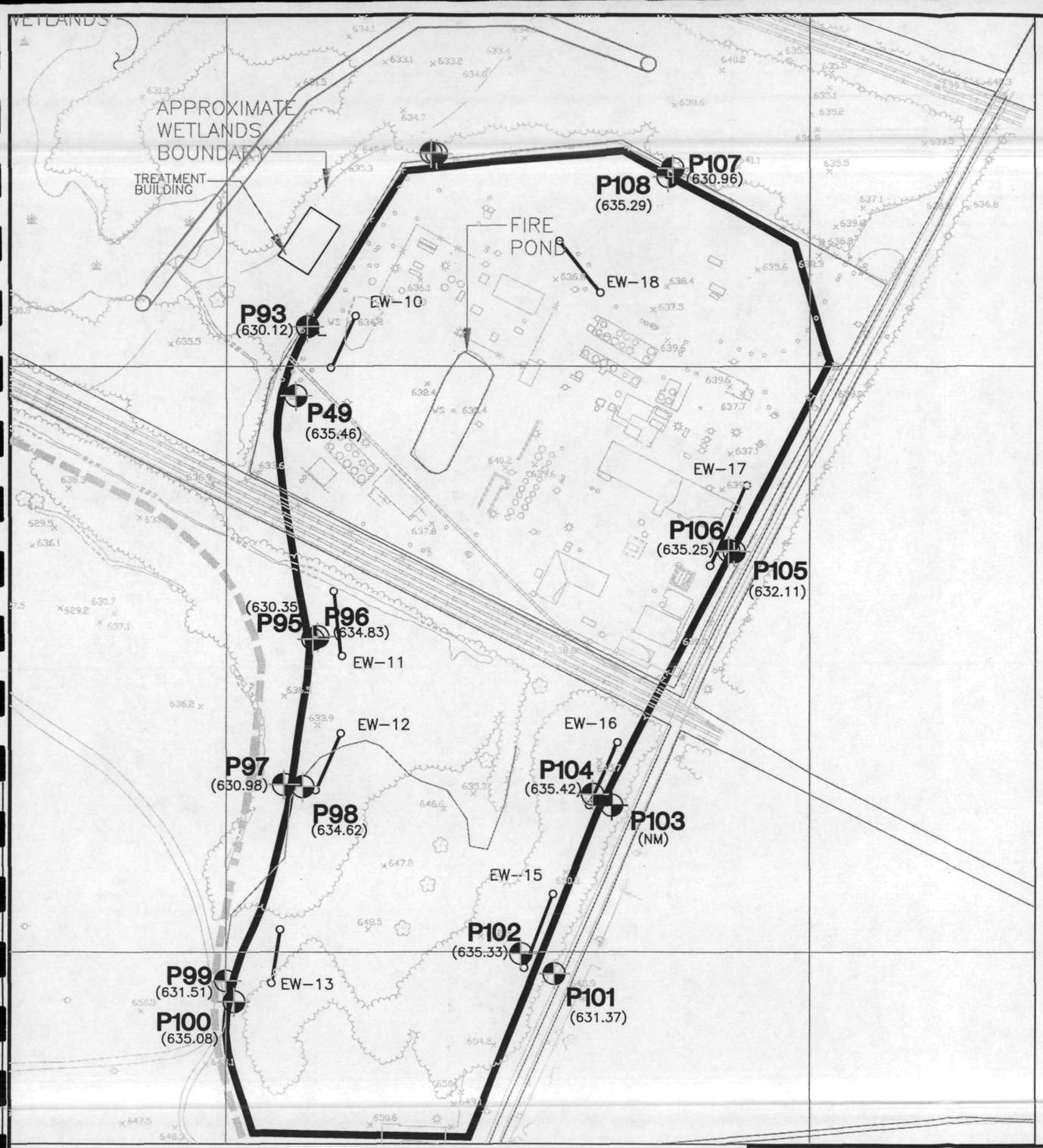
1. GROUNDWATER ELEVATIONS WERE MEASURED AT THE SITE ON MARCH 27, 2000

N

0 200

SCALE IN FEET

SCALE			FIGURE
1"=200'	MONTGOMERY WATSON Chicago, Illinois	AMERICAN CHEMICAL SERVICES, INC. GRIFFITH, INDIANA	PGCS GAUGING MARCH 2000	4.2



LEGEND

- P106 — PIEZOMETER LOCATION AND DESIGNATION
- (638.12) — GROUNDWATER ELEVATION
- BARRIER WALL
- GRIFFITH LANDFILL BOUNDARY
- PERIMETER GROUND WATER CONTAINMENT SYSTEM EXTRACTION TRENCH
- EW-11 — BWES EXTRACTION TRENCH LOCATION AND DESIGNATION

NOTES

1. GROUNDWATER ELEVATIONS WERE MEASURED THE SITE ON MARCH 27, 2000

N

0 200

SCALE IN FEET

SCALE			FIGURE
1"=200'	MONTGOMERY WATSON Chicago, Illinois	AMERICAN CHEMICAL SERVICES, INC. GRIFFITH, INDIANA	BWES GAUGING MARCH 2000	4.3

January 5, 2000 Compliance Sample Laboratory Results

PH IN WATER ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	RESULT (Standard pH units)	Independent Validation	REPORTING LIMIT (Standard pH units)
1.	EFFLUENT	Q1024-1	7.8	Q	N/A

Reviewed by/ID#: _____ / _____ Date: 1-13-00

TOTAL SUSPENDED SOLIDS ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	RESULT (mg/L)	REPORTING LIMIT (mg/L)
1.	EFFLUENT	Q1024-1	< 4	4

Reviewed by/ID#: _____ / _____ Date: 1-13-00

TRITEST, INC.
3909 Beryl Road
Raleigh, NC 27607
Telephone: (919) 834-4984
Fax: (919) 834-6497
NC/WW Cert.#: 067

Laboratory Report

--- Prepared for ---

Mr. Charles Cabaniss
Test America, Inc.
2700 Gateway Centre
Suite 625
Morrisville, NC 27560

Project ID: 01
Project Info: ACS-89 / 00-0005

Report Date: 1/14/00
Date Received: 1/07/00

Work Order #: 0001-00332

Cust. Code: HY9699
Cust. P.O.#:

No.	Sample ID	Date Sampled	Time Sampled	Matrix	Condition
001	ACS-89 EFF. / 00-0005	1/05/2000	14:00	WW	4±2°C

Test Performed	Method	Results	Tech	Analyzed	Qual
Biochemical Oxygen Demand	EPA 405.1	<2.0 mg/L	TP	1/07/00	

Report certified by:

for Tritest, Inc.

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract: _____

Lab Code: COMPU_ Case No.: _____ SAS No.: _____ SDG No.: Q1024_

Matrix (soil/water): WATER Lab Sample ID: Q1024-1

Level (low/med): LOW__ Date Received: 01/05/00

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L___

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	35.1	U		P	Independent validation Qualifier
7440-36-0	Antimony	2.0	B		P	B
7440-38-2	Arsenic	11.2			P	
7440-39-3	Barium	528			P	B
7440-41-7	Beryllium	0.20	U		P	B
7440-43-9	Cadmium	0.35	B		P	B
7440-70-2	Calcium	279000			P	B
7440-47-3	Chromium	1.5	U		P	
7440-48-4	Cobalt	16.8			P	
7440-50-8	Copper	2.0	B		P	
7439-89-6	Iron	81.3	B		P	B
7439-92-1	Lead	1.5	U		P	
7439-95-4	Magnesium	21000			P	B
7439-96-5	Manganese	5320			P	B
7439-97-6	Mercury	0.64	U		CV	
7440-02-0	Nickel	105			P	
7440-09-7	Potassium	9950			P	
7782-49-2	Selenium	3.4	U		P	
7440-22-4	Silver	0.90	U		P	
7440-23-5	Sodium	154000			P	B
7440-28-0	Thallium	3.8	B		P	
7440-62-2	Vanadium	1.3	B		P	
7440-66-6	Zinc	10.6	B		P	

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

_____

_____

_____

_____

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q1024

Matrix: (soil/water) WATER Lab Sample ID: Q1024-1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Q1024-1A56

Level: (low/med) LOW Date Received: 01/06/00

% Moisture: not dec. _____ Date Analyzed: 01/10/00

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Independent validation Qualifier
74-87-3	Chloromethane	0.5	U	
75-01-4	Vinyl Chloride	0.5	U	
74-83-9	Bromomethane	0.5	U	
75-00-3	Chloroethane	0.5	U	
75-35-4	1,1-Dichloroethene	0.5	U	
75-15-0	Carbon disulfide	0.5	U	
67-64-1	Acetone	2	U	UJ
75-09-2	Methylene Chloride	0.6		SUJ
156-60-5	trans-1,2-Dichloroethene	0.5	U	
75-34-3	1,1-Dichloroethane	0.5	U	
156-59-2	cis-1,2-Dichloroethene	0.5	U	
78-93-3	2-butanone	2	U	UJ
67-66-3	Chloroform	0.5	U	
71-55-6	1,1,1-Trichloroethane	0.5	U	
56-23-5	Carbon Tetrachloride	0.5	U	
71-43-2	Benzene	0.5	U	UJ
107-06-2	1,2-Dichloroethane	0.5	U	
79-01-6	Trichloroethene	0.5	U	UJ
78-87-5	1,2-Dichloropropane	0.5	U	
75-27-4	Bromodichloromethane	0.5	U	
10061-01-5	cis-1,3-Dichloropropene	0.5	U	
108-10-1	4-Methyl-2-pentanone	2	U	
108-88-3	Toluene	0.2	JB	JB
10061-02-6	trans-1,3-Dichloropropene	0.5	U	
79-00-5	1,1,2-Trichloroethane	0.5	U	
127-18-4	Tetrachloroethene	0.5	U	
591-78-6	2-hexanone	2	U	
124-48-1	Dibromochloromethane	0.5	U	
108-90-7	Chlorobenzene	0.5	U	
100-41-4	Ethylbenzene	0.5	U	
108-38-3	m,p-Xylene	1	U	
95-47-6	o-Xylene	0.5	U	
100-42-5	Styrene	0.5	U	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q1024

Matrix: (soil/water) WATER Lab Sample ID: Q1024-1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Q1024-1A56

Level: (low/med) LOW Date Received: 01/06/00

% Moisture: not dec. _____ Date Analyzed: 01/10/00

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Independent validation qualifier
75-25-2	Bromoform	0.5	U	UJ
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	
540-59-0	1,2-Dichloroethene (total)	0.5	U	
1330-20-7	Xylene (total)	0.5	U	

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: Q1024 SAS No.: SDG No.: Q1024

Matrix: (soil/water) WATER Lab Sample ID: Q1024-1

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: GQ10241A68

Level: (low/med) LOW Date Received: 01/06/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted:01/10/00

Concentrated Extract Volume: 500(uL) Date Analyzed: 01/12/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Independent Validation Qualifier
111-44-4	Bis(2-chloroethyl)ether	10	U	
106-44-5	4-Methylphenol	10	U	R
78-59-1	Isophorone	10	U	
117-81-7	bis(2-ethylhexyl)Phthalate	2	JB	

Data Analysis Technologies, Inc.
7715 Corporate Blvd.
Plain City Oh. 43064

Sample Analysis Certificate

Client: CompuChem

Client Sample ID: Effluent

Sample Volume: 1000 mls

Extract Volume: 1.0 ml

Date Sampled: 01/05/00

Date Received: 01/10/00

Lab Sample ID: 0100019-1

Matrix: Aqueous

Target Analyte	Result	Independent Validation Qualifie	Units	DL	Prep Date	Analysis Date
Pentachlorophenol	ND	UJ	ug/L	0.1	01/12/00	01/20/00

Surrogate:	Amount Spiked	Amount Found	Units	%Rec.
2,4,6-Tribromophenol	11.1	4.9	ug	44%

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q1024

Matrix: (soil/water) WATER Lab Sample ID: Q1024-1

Sample wt/vol: 500.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/06/00

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/10/00

Concentrated Extract Volume: 2500(uL) Date Analyzed: 01/12/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.11	J
11096-82-5	Aroclor-1260	0.50	U

January 28, 2000 Compliance Resample Laboratory Results

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1114

Matrix: (soil/water) WATER Lab Sample ID: R1114-1

Sample wt/vol: 1080 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 01/29/00

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:01/31/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 01/31/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.46	U
11104-28-2	Aroclor-1221	0.92	U
11141-16-5	Aroclor-1232	0.46	U
53469-21-9	Aroclor-1242	0.46	U
12672-29-6	Aroclor-1248	0.46	U
11097-69-1	Aroclor-1254	0.46	U
11096-82-5	Aroclor-1260	0.46	U

February 2, 2000 Compliance Sample Laboratory Results

PH IN WATER ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	RESULT (Standard pH units)	REPORTING LIMIT (Standard pH units)
1.	EFFLUENT	T1024-1	7.8	N/A

Reviewed by/ID#: _____ Date: 2-4-00

TOTAL SUSPENDED SOLIDS ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	RESULT (mg/L)	REPORTING LIMIT (mg/L)
1.	EFFLUENT	T1024-1	BRL	4

BRL = BELOW REPORTING LIMIT

Reviewed by/ID#: [signature] / _____ Date: 2-4-00

TRITEST, INC.
3909 Beryl Road
Raleigh, NC 27607
Telephone: (919) 834-4984
Fax: (919) 834-6497
NC/WW Cert.#: 067

Laboratory Report

--- Prepared for ---

Mr. Charles Cabaniss
Test America, Inc.
2700 Gateway Centre
Suite 625
Morrisville, NC 27560

Project ID: 01
Project Info: WW / ACS-89 / 00-0030

Report Date: 2/14/00
Date Received: 2/03/00

Work Order #: 0002-00135

Cust. Code: HY9699
Cust. P.O.#:

No.	Sample ID	Date Sampled	Time Sampled	Matrix	Condition
001	ACS-89 EFF / 00-0030	2/02/2000	14:00	WW	4±2°C

Test Performed	Method	Results	Tech	Analyzed	Qual
Biochemical Oxygen Demand	EPA 405.1	33 mg/L	TP	2/04/00	

Report certified by:

for Tritest, Inc.

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

ab Code: LIBRTY Case No.: SAS No.: SDG No.: T1024

Matrix (soil/water): WATER Lab Sample ID: T1024-1

evel (low/med): LOW Date Received: 02/03/00

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Independant validation qualifiers

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	41.8	B		P	B
7440-36-0	Antimony	2.6	U		P	
7440-38-2	Arsenic	1.6	U		P	B
7440-39-3	Barium	91.6			P	B
7440-41-7	Beryllium	0.20	B		P	B
7440-43-9	Cadmium	0.20	U		P	B
7440-70-2	Calcium	122000			P	B
7440-47-3	Chromium	0.50	U		P	
7440-48-4	Cobalt	0.40	U		P	
7440-50-8	Copper	0.60	U		P	B
7439-89-6	Iron	289			P	B
7439-92-1	Lead	1.0	U		P	
7439-95-4	Magnesium	20800			P	
7439-96-5	Manganese	974			P	B
7439-97-6	Mercury	0.10	U		CV	B
7440-02-0	Nickel	1.5	B		P	B
7440-09-7	Potassium	6760		E	P	J
7782-49-2	Selenium	2.3	U	N	P	UJ
7440-22-4	Silver	0.60	U		P	
7440-23-5	Sodium	72200			P	B
7440-28-0	Thallium	5.6	B		P	B
7440-62-2	Vanadium	0.53	B		P	B
7440-66-6	Zinc	0.50	U		P	B

Color Before: COLORLESS Clarity Before: CLEAR Texture:

olor After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T1024

Matrix: (soil/water) WATER Lab Sample ID: T1024-1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: T1024-1A52

Level: (low/med) LOW Date Received: 02/03/00

% Moisture: not dec. _____ Date Analyzed: 02/12/00

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Independent validation Qualifier
74-87-3	Chloromethane	0.5	U	
75-01-4	Vinyl Chloride	0.2	J	J
74-83-9	Bromomethane	0.5	U	
75-00-3	Chloroethane	0.5	U	
75-35-4	1,1-Dichloroethene	0.5	U	
75-15-0	Carbon disulfide	0.5	U	
67-64-1	Acetone	42		UJ
75-09-2	Methylene Chloride	2		UJ
156-60-5	trans-1,2-Dichloroethene	0.5	U	
75-34-3	1,1-Dichloroethane	0.5	U	
156-59-2	cis-1,2-Dichloroethene	0.4	J	J
78-93-3	2-butanone	8		UJ
67-66-3	Chloroform	0.5	U	
71-55-6	1,1,1-Trichloroethane	0.5	U	
56-23-5	Carbon Tetrachloride	0.5	U	
71-43-2	Benzene	0.5	U	
107-06-2	1,2-Dichloroethane	0.5	U	
79-01-6	Trichloroethene	7		
78-87-5	1,2-Dichloropropane	0.5	U	
75-27-4	Bromodichloromethane	0.5	U	
10061-01-5	cis-1,3-Dichloropropene	0.5	U	
108-10-1	4-Methyl-2-pentanone	2	U	UJ
108-88-3	Toluene	0.2	J	J
10061-02-6	trans-1,3-Dichloropropene	0.5	U	
79-00-5	1,1,2-Trichloroethane	0.5	U	
127-18-4	Tetrachloroethene	0.5	U	
591-78-6	2-hexanone	2	U	UJ
124-48-1	Dibromochloromethane	0.5	U	
108-90-7	Chlorobenzene	0.5	U	
100-41-4	Ethylbenzene	0.2	J	J
108-38-3	m,p-Xylene	1	U	
95-47-6	o-Xylene	0.5	U	
100-42-5	Styrene	0.5	U	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T1024

Matrix: (soil/water) WATER Lab Sample ID: T1024-1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: T1024-1A52

Level: (low/med) LOW Date Received: 02/03/00

% Moisture: not dec. _____ Date Analyzed: 02/12/00

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Independent validation Qualifier
75-25-2	Bromoform	0.5	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	
106-46-7	1,4-Dichlorobenzene	0.4	J	J
540-59-0	1,2-Dichloroethene (total)	0.4	J	J
1330-20-7	Xylene (total)	0.5	U	

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: Q1024 SAS No.: SDG No.: T1024

Matrix: (soil/water) WATER Lab Sample ID: T1024-1

Sample wt/vol: 1040 (g/mL) ML Lab File ID: T10241J2A68

Level: (low/med) LOW Date Received: 02/03/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/03/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/07/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
111-44-4	Bis(2-chloroethyl)ether	9.6	U
106-44-5	4-Methylphenol	10	U
78-59-1	Isophorone	10	U
117-81-7	bis(2-ethylhexyl)Phthalate	6	U

Independent validation qualifier

UJ

Annotated 8/11/00 8

Data Analysis Technologies, Inc.
7715 Corporate Blvd.
Plain City Oh. 43064

Sample Analysis Certificate

Client: CompuChem

Client Sample ID: Effluent

Sample Volume: 1000 mls

Extract Volume: 10 ml

Date Sampled: 02/02/00

Date Received: 02/07/00

Lab Sample ID: 0200016-1

Matrix: Aqueous

Target Analyte	Result	Units	DL	Prep Date	Analysis Date
Pentachlorophenol	ND	ug/L	1.0	02/09/00	02/19/00

Surrogate:	Amount Spiked	Amount Found	Units	%Rec.
2,4,6-Tribromophenol	10.0	4.8	ug	48%

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T1024

Matrix: (soil/water) WATER Lab Sample ID: T1024-1

Sample wt/vol: 1030 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/02/00

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/03/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/08/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.48	U
11104-28-2	Aroclor-1221	0.97	U
11141-16-5	Aroclor-1232	0.48	U
53469-21-9	Aroclor-1242	0.48	U
12672-29-6	Aroclor-1248	0.48	U
11097-69-1	Aroclor-1254	0.48	U
11096-82-5	Aroclor-1260	0.48	U

February 24, 2000 Compliance Resample Laboratory Results

TRITEST, INC.
3909 Beryl Road
Raleigh, NC 27607
Telephone: (919) 834-4984
Fax: (919) 834-6497
NC/WW Cert.#: 067

Laboratory Report

--- Prepared for ---

Mr. Charles Cabaniss
Test America, Inc.
2700 Gateway Centre
Suite 625
Morrisville, NC 27560

Project ID: 01
Project Info: ACS-89 / DUE THURS. 3/2/00

Report Date: 0/00/00
Date Received: 2/25/00

Work Order #: 0002-01102

Cust. Code: HY9699
Cust. P.O.#:

No.	Sample ID	Date Sampled	Time Sampled	Matrix	Condition
001	ACS-89 EFF. (2-24)	2/24/2000	15:00	WW	4±2°C

Test Performed	Method	Results	Tech	Analyzed	Qual
Biochemical Oxygen Demand	EPA 405.1	44 mg/L	TP	2/25/00	

Report certified by:

for Tritest, Inc.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: S1114

Matrix: (soil/water) WATER Lab Sample ID: S1114-1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: S1114-1A51

Level: (low/med) LOW Date Received: 02/22/00

% Moisture: not dec. _____ Date Analyzed: 02/22/00

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

Independent validation qualifiers

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	Chloromethane	0.5	U	
75-01-4	Vinyl Chloride	0.5	U	
74-83-9	Bromomethane	0.5	U	
75-00-3	Chloroethane	0.5	U	
75-35-4	1,1-Dichloroethene	0.5	U	
75-15-0	Carbon disulfide	0.2	J	
67-64-1	Acetone	5200	E	E,D
75-09-2	Methylene Chloride	2		
156-60-5	trans-1,2-Dichloroethene	0.5	U	
75-34-3	1,1-Dichloroethane	0.5	U	
156-59-2	cis-1,2-Dichloroethene	0.5	U	
78-93-3	2-butanone	33		
67-66-3	Chloroform	0.5	U	
71-55-6	1,1,1-Trichloroethane	0.5	U	
56-23-5	Carbon Tetrachloride	0.5	U	
71-43-2	Benzene	30	E	
107-06-2	1,2-Dichloroethane	0.5	U	
79-01-6	Trichloroethene	0.5	U	
78-87-5	1,2-Dichloropropane	0.5	U	
75-27-4	Bromodichloromethane	0.5	U	
10061-01-5	cis-1,3-Dichloropropene	0.5	U	
108-10-1	4-Methyl-2-pentanone	8		
108-88-3	Toluene	0.2	J	
10061-02-6	trans-1,3-Dichloropropene	0.5	U	
79-00-5	1,1,2-Trichloroethane	0.5	U	
127-18-4	Tetrachloroethene	0.5	U	
591-78-6	2-hexanone	2	U	
124-48-1	Dibromochloromethane	0.5	U	
108-90-7	Chlorobenzene	0.5	U	
100-41-4	Ethylbenzene	0.2	J	
108-38-3	m,p-Xylene	0.8	J	
95-47-6	o-Xylene	0.3	J	
100-42-5	Styrene	0.5	U	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: S1114

Matrix: (soil/water) WATER Lab Sample ID: S1114-1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: S1114-1A51

Level: (low/med) LOW Date Received: 02/22/00

% Moisture: not dec. _____ Date Analyzed: 02/22/00

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-25-2	Bromoform	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U
106-46-7	1,4-Dichlorobenzene	0.5	U
540-59-0	1,2-Dichloroethene (total)	0.5	U
1330-20-7	Xylene (total)	1	

March 16, 2000 Compliance Sample Laboratory Results

PH IN WATER ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	RESULT (Standard pH units)	Independent Validation Qualifier	REPORTING LIMIT (Standard pH units)
1.	EFFLUENT	W1024-1	8.2	Q	N/A

Reviewed by/ID#: Cooke / 2356 Date: 3/29/00

TOTAL SUSPENDED SOLIDS ANALYSIS

SUMMARY REPORT

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM NUMBER	RESULT (mg/L)	REPORTING LIMIT (mg/L)
1.	EFFLUENT	W1024-1	BRL	4

BRL = BELOW REPORTING LIMIT

Reviewed by/ID#: LCOOKE / 2356 Date: 3/29/00

TRITEST, INC.
3909 Beryl Road
Raleigh, NC 27607
Telephone: (919) 834-4984
Fax: (919) 834-6497
NC/WW Cert.#: 067

L a b o r a t o r y R e p o r t

--- Prepared for ---

M Charles Cabaniss
Test America, Inc.
2700 Gateway Centre
Suite 625
Morrisville, NC 27560

Project ID: 01
Project Info: WW/ ACS-89/RUSH 5-DUE 3-22-00

Report Date: 0/00/00
Date Received: 3/17/00

Work Order #: 0003-00669

Cust. Code: HY9699
Cust. P.O.#:

No.	Sample ID	Date Sampled	Time Sampled	Matrix	Condition
)01	EFFLUENT / GRAB	3/16/2000	15:00	WW	4±2°C

Test Performed	Method	Results	Tech	Analyzed	Qual
Biochemical Oxygen Demand	EPA 405.1	<2.0 mg/L	TP	3/17/00	

Report certified by:

for Tritest, Inc.

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: W1024_

Matrix (soil/water): WATER Lab Sample ID: W1024-1

Level (low/med): LOW Date Received: 03/17/00

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	Independent validation Qualifier
7429-90-5	Aluminum	39.3	U		P	B
7440-36-0	Antimony	2.6	U		P	
7440-38-2	Arsenic	15.4			P	B
7440-39-3	Barium	136			P	B
7440-41-7	Beryllium	0.10	U		P	B
7440-43-9	Cadmium	0.20	U		P	B
7440-70-2	Calcium	165000			P	B
7440-47-3	Chromium	0.50	U		P	
7440-48-4	Cobalt	2.1	B		P	
7440-50-8	Copper	0.71	B		P	B
7439-89-6	Iron	14.6	U		P	B
7439-92-1	Lead	1.5	B		P	
7439-95-4	Magnesium	19000			P	B
7439-96-5	Manganese	5390			P	B
7439-97-6	Mercury	0.64	U		CV	
7440-02-0	Nickel	5.4			P	
7440-09-7	Potassium	6740		E	P	E
7782-49-2	Selenium	2.3	U		P	
7440-22-4	Silver	0.60	U		P	
7440-23-5	Sodium	46000			P	B
7440-28-0	Thallium	3.0	U		P	B
7440-62-2	Vanadium	0.50	U		P	
7440-66-6	Zinc	0.50	U		P	B

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments:

_____

_____

_____

_____

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: W1024

Matrix: (soil/water) WATER Lab Sample ID: W1024-1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: W1024-1A56

Level: (low/med) LOW Date Received: 03/17/00

% Moisture: not dec. _____ Date Analyzed: 03/28/00

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Independent validation qualifiers
74-87-3	Chloromethane	0.5	U	UJ
75-01-4	Vinyl Chloride	0.5	U	
74-83-9	Bromomethane	0.5	U	
75-00-3	Chloroethane	0.5	U	
75-35-4	1,1-Dichloroethene	0.5	U	
75-15-0	Carbon disulfide	0.5	U	
67-64-1	Acetone	2	U	UJ
75-09-2	Methylene Chloride	4		
156-60-5	trans-1,2-Dichloroethene	0.5	U	
75-34-3	1,1-Dichloroethane	0.5	U	
156-59-2	cis-1,2-Dichloroethene	0.5	U	
78-93-3	2-butanone	2	U	UJ
67-66-3	Chloroform	0.5	U	
71-55-6	1,1,1-Trichloroethane	0.5	U	
56-23-5	Carbon Tetrachloride	0.5	U	
71-43-2	Benzene	0.5	U	
107-06-2	1,2-Dichloroethane	0.5	U	
79-01-6	Trichloroethene	0.5	U	
78-87-5	1,2-Dichloropropane	0.5	U	
75-27-4	Bromodichloromethane	0.5	U	
10061-01-5	cis-1,3-Dichloropropene	0.5	U	
108-10-1	4-Methyl-2-pentanone	2	U	UJ
108-88-3	Toluene	0.2	J	J
10061-02-6	trans-1,3-Dichloropropene	0.5	U	
79-00-5	1,1,2-Trichloroethane	0.5	U	
127-18-4	Tetrachloroethene	0.5	U	
591-78-6	2-hexanone	2	U	UJ
124-48-1	Dibromochloromethane	0.5	U	
108-90-7	Chlorobenzene	0.5	U	
100-41-4	Ethylbenzene	0.5	U	
108-38-3	m,p-Xylene	1	U	
95-47-6	o-Xylene	0.5	U	
100-42-5	Styrene	0.5	U	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: W1024

Matrix: (soil/water) WATER Lab Sample ID: W1024-1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: W1024-1A56

Level: (low/med) LOW Date Received: 03/17/00

% Moisture: not dec. _____ Date Analyzed: 03/28/00

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-25-2	Bromoform	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U
106-46-7	1,4-Dichlorobenzene	0.5	U
540-59-0	1,2-Dichloroethene (total)	0.5	U
1330-20-7	Xylene (total)	0.5	U

Independ validation qualifier UJ

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: W1024

Matrix: (soil/water) WATER Lab Sample ID: W1024-1

Sample wt/vol: 1025 (g/mL) ML Lab File ID: GW1024-1B68

Level: (low/med) LOW Date Received: 03/17/00

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/17/00

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/18/00

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	Independent validation Qualifier
111-44-4	Bis(2-chloroethyl)ether	9	U	R
106-44-5	4-Methylphenol	33	U	
78-59-1	Isophorone	49	U	
117-81-7	bis(2-ethylhexyl)Phthalate	6	U	

Data Analysis Technologies, Inc.
7715 Corporate Blvd.
Plain City Oh. 43064

Sample Analysis Certificate

Client: CompuChem

Client Sample ID: Effluent

Sample Volume: 1000 mls

Extract Volume: 1 ml

Date Sampled: 03/16/00

Date Received: 03/21/00

Lab Sample ID: 0300045-1

Matrix: Aqueous

Target Analyte	Result	Qualifier (Independent validation)	Units	DL	Prep Date	Analysis Date
Pentachlorophenol	ND	Q	ug/L	0.1	03/24/00	04/05/00

Surrogate:	Amount Spiked	Amount Found	Units	%Rec.
2,4,6-Tribromophenol	10.0	6.8	ug	68%

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: W1024

Matrix: (soil/water) WATER Lab Sample ID: W1024-1

Sample wt/vol: 1100 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/17/00

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/17/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 04/03/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.45	U
11104-28-2	Aroclor-1221	0.91	U
11141-16-5	Aroclor-1232	0.45	U
53469-21-9	Aroclor-1242	0.45	U
12672-29-6	Aroclor-1248	0.45	U
11097-69-1	Aroclor-1254	0.45	U
11096-82-5	Aroclor-1260	0.45	U

B

February 3, 2000 Sediment Sample Laboratory Results

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACS-SD1-00

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1121

Matrix: (soil/water) SOIL Lab Sample ID: R1121-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 45 decanted: (Y/N) N Date Received: 02/04/00

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/04/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/11/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	59	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	59	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	22	J
11096-82-5	Aroclor-1260	59	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ACS-SD2-00

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R1121

Matrix: (soil/water) SOIL Lab Sample ID: R1121-2

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 59 decanted: (Y/N) N Date Received: 02/04/00

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/04/00

Concentrated Extract Volume: 5000(uL) Date Analyzed: 02/11/00

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	79	U
11104-28-2	Aroclor-1221	100	U
11141-16-5	Aroclor-1232	79	U
53469-21-9	Aroclor-1242	55	U
12672-29-6	Aroclor-1248	55	U
11097-69-1	Aroclor-1254	15	J
11096-82-5	Aroclor-1260	79	U

Historic Sediment Sample Laboratory Results

FORM 1
PEST ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACS-SDIW22

Lab Name: QUANTERRA, ST. LOUIS MO Contract: 707.03

Lab Code: Case No.: SAS No.: SDG No.: 3ACS-DEC98

Matrix: (soil/water) SOIL Lab Sample ID: 19579-004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: IB__230

% Moisture: 0 decanted: (Y/N) N Date Received: 12/05/98

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:12/11/98

Concentrated Extract Volume: 10(mL) Date Analyzed: 01/21/99

Injection Volume: _____(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
11104-28-2	Aroclor-1221	33	U
1114-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
12674-11-2	Aroclor-1016	33	U

FORM I pest

C

TABLE 8
PCB ORGANICS ANALYSIS SUMMARY
Soil/Sediment Samples
WETLAND INVESTIGATION
AMERICAN CHEMICAL SERVICES, INC.
GRIFFITH, INDIANA

SAMPLE ID	Detected PCBs			Total PCBs
	aroclor-1248	aroclor-1254	aroclor-1260	
SD17	58 JP	150 P	140	348
SD18	- -	- -	- -	- -
SD18-91	- -	- -	- -	- -
SD19	13 JP	36 JP	16 JP	65
SD20	- -	79 J	180 P	259
SD21	1,300 JP	8,700	3,100 P	13,100
SD22	560 JP	3,600	1,700	5,860
SD22-91	270 JP	1,800	830	2,900
SD23	770 JP	4,000	1,900	6,670
SD24	- -	- -	- -	- -
SD25	- -	46 J	- -	46
SD26	320 JP	1,700	1,900	3,920
SD27	48 J	190 P	270 P	508
SD28	220 J	1,200	970 P	2,390
SD29	180	380 P	330 P	890
SD29-91	84 P	450 P	570 P	1,104
SD30	74 P	570 P	390	1,034
SD31	61 JP	600	240 P	901
SD32	35 JP	79 P	73	187
SD33	27,000 P	63,000 P	35,000 P	125,000
SD34	- -	14 JP	13 JP	27
SD35	2,700 JP	8,100 P	6,200 P	17,000
SD36	- -	37 JP	- -	37
SD37	- -	- -	- -	- -
SD38	30 JP	99 JP	100 P	229

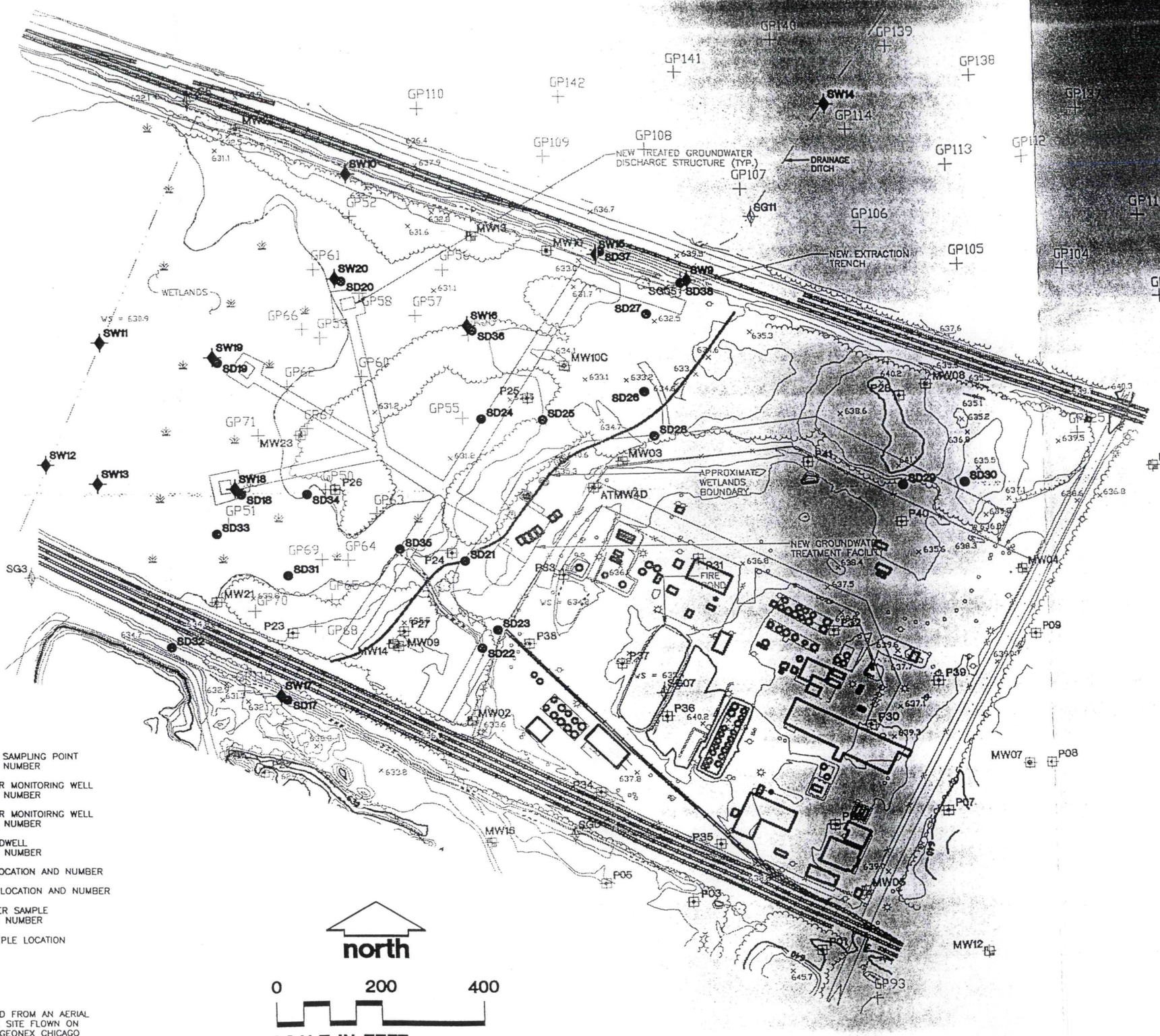
Notes:

1. All results expressed in micrograms per kilogram (ug/kg).
2. "--" = compound was not detected above the quantitation limit
3. "J" = indicates an estimated concentration between the quantitation limit and the method detection limit
4. "P" = This flag is used for pesticide/arochlor target analyte when there is a greater than 25 percent difference for detected concentrations between the two GC columns.

CCH/cch/SCI

j:\1252\042\techmemo\wetland\lab-data.xlw

PEST - soil



LEGEND

- GP106 — GROUNDWATER SAMPLING POINT LOCATION AND NUMBER
- MW01 — UPPER AQUIFER MONITORING WELL LOCATION AND NUMBER
- MW10 — LOWER AQUIFER MONITOIRNG WELL LOCATION AND NUMBER
- LW01 — LEACHATE HEADWELL LOCATION AND NUMBER
- P01 — PIEZOMETER LOCATION AND NUMBER
- SG08 — STAFF GAUGE LOCATION AND NUMBER
- SW7A — SURFACE WATER SAMPLE LOCATION AND NUMBER
- SD01 — SEDIMENT SAMPLE LOCATION AND NUMBER

NOTES

1. BASE MAP DEVELOPED FROM AN AERIAL SURVEY MAP OF THE SITE FLOWN ON MARCH 8, 1994 BY GEONEX CHICAGO AERIAL SURVEY, INC. CONTOUR INTERVAL TWO FEET.

north

0 200 400

SCALE IN FEET

FIGURE 1

SAMPLING POINTS

WETLAND INVESTIGATION
AMERICAN CHEMICAL SERVICE, INC.
NPL SITE
GRIFFITH, INDIANA

Drawing Number
4077.007.B23

MONTGOMERY WATSON

Developed By: DCH
Approved By: CCH/RJV
Reference
Revisions

Management Review
Other
Technical Review
Project Manager
5-10-96
Graphic Standards CCM
Lead Professional
QUALITY CONTROL